**AP Statistics: Simulations with the calculator Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. A basketball player has a track record of hitting 78% of her shots. In recent game she made 12 out of 14 shots. The announcer says this player “is on fire! She’s unstoppable tonight.” Is it that unusual for her to make 12 or more shots out of 14? To answer this, complete 10 trials of a simulation.
2. Write instructions for completing this simulation ***using your calculator***.
3. Record the result for 10 trials below. For “Number,” write the number that your calculator generates. For result: X = Missed; S = Made. Then total up the MADE shots and record your result in the table at right.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Total Made |
| Trial 1 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 2 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 3 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 4 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 5 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 6 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 7 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 8 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 9 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trial 10 | Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Result |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |
| --- | --- |
| Shots Made | Frequency |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| 11 |  |
| 12 |  |
| 13 |  |
| 14 |  |

1. What is the conclusion from your results? Does 12 out of 14 or more seem unusual according to your simulation?
2. Find the QUIA link on the class website and enter your results.
3. As a 4-H project, Billy is raising chickens. He feeds and waters them every day, and collects the eggs every other day, selling them to people in the neighborhood. He has found that each hen’s nest will contain from 0 to 2 eggs. Based on past experience he estimates that there will be no eggs in 10% of the nests, one egg in 30% of the nests, and 2 eggs in the other 60%. Conduct a simulation to estimate how many nests Billy will have to visit to collect a dozen eggs.
4. Write instructions for completing a simulation ***using your calculator***.
5. Conduct 10 trials and write the results below.
6. Find the quia link on the class website and enter your results.
7. Based on your simulation what is the average number of nests needed to collect a dozen eggs?